May 2015

DRAFT WORK PLAN - PCB PILOT PROGRAM
LIMITED AIR SAMPLING AT TWO ADDITIONAL SCHOOLS

BACKGROUND

In follow-up to communications with EPA, the SCA has identified additional city school buildings that are similar to PS 199M, in respects likely to be relevant to the risk of persistent PCB levels in air following light ballast removal and implementation of BMPs, for potential inclusion in the PCB Pilot study. Schools were evaluated based on the following factors: architect; prime contractor and associated subcontractors; and significant construction characteristics.

First, we attempted to find other schools designed by PS 199M's architect, Edward D. Stone, under the assumption that his firm may have specified similar materials, products, and design features to those used at PS 199M. Our research revealed, however, that PS 199M was the only New York City public school ever designed by the Stone firm.

We next explored whether the general contractor that built PS 199M, Wilaka Construction Corporation, constructed other New York City public schools during the period 1958-62, the same time frame in which PS 199M was built. Wilaka may have used building materials and products (including those containing PCBs) and construction means and methods (including, possibly, those that may affect PCB levels in dust and air) similar to those used at PS 199M in other schools it constructed. The results of this research are provided below.

Finally, we would like to determine whether certain design characteristics of the PS 199M structure could, potentially, be responsible for the manner in which the building has behaved with respect to PCB levels in the air. The structure of PS 199M is a combination of concrete-encased steel beams and columns with reinforced cast-in-place concrete beams, columns, and foundation walls. Portions of the ground floor are located on slab-on-grade; remaining portions of the first floor are situated above a basement. Roof decks are reinforced concrete with substantial slopes in most areas. Roof overhang cantilevers from the building face extend approximately 9 feet. The three-story building is generally configured in an "O" shape. A double-story auditorium is located on the first floor in the middle of the building, above which is an open courtyard. On the second floor, a double-story gymnasium is situated on the east side of the building above a first-floor lunch room.

These structural and design features, especially the raised interior courtyard, may have an impact on the building's ventilation and thermal load, thereby affecting PCB air levels. Accordingly, we have identified for further study other school buildings that resemble PS 199M in these aspects of design.

The prime contractors for 199M were: Wilaka Construction Corporation as General Contractor (GC); H. Sand for heating and ventilation (H&V); and Walton Electric Company for electrical.

- Of the 95 schools contracted for construction from 1958 – 1962:

- 11 of the 95 were concrete frame buildings (199M, 46K, 90K, 105K, 111X, 132X, 133X, 198M, 294K, 296K/562K, and Far Rockaway High School); 4 of these contain interior courtyards (199M, 132X, 198M, and 296K/562K)
- 28 of the 95 have interior courtyards (199M, 5X, 20M, 27R, 57M, 76M, 79M, 84M, 100X, 132X, 145M, 154X, 161M, 174M, 180M, 192Q, 198M, 242K Addition, 257K, 275K, 288K, 296K/562K, 298K, 299K, 304K, 305K, Southeast Brooklyn High School, and Northwest Queens High School).
- 10 of the 95 had Wilaka Construction Corporation as GC (199M, 1X, 8Q, 28M, 111X, 133X, 145M, 161M, 274K, and 297K).
- 16 of the 95 had H. Sand as H&V (199M, 2R, 27R, 25R, 29X, 41X, 49R, 90K, 143Q, 224K, 232Q, 236K, 276K, New Dorp High School, Westinghouse Vocational High School Phase II, and Curtis High School).
- 4 of the 95 had Walton Electric (199M, 27R, 111X, and 224K).

- As indicated above, Wilaka was contracted by the Board of Education ("BOE") to build 10 schools during the 1958-1962 period.
  - 3 of the 10 had concrete framing (199M, 111X, and 133X); 2 of these 3 had Walton Electric (199M and 111X). Of the 3 with concrete framing, only 199M had an interior courtyard.
  - 3 of the 10 had interior courtyards (199M, 145M, and 161M); of those 3 with interior courtyards, only 199M had a concrete frame.
  - 1 of the 10, only 199M, had H. Sand.
  - 2 of the 10 had Walton Electric (199M and 111X).

- The H&V contractor, H. Sand & Co., was contracted by the BOE to do the H&V work on 16 schools, including 199M, during the 1958-1962 period.
  - 2 of the 16 had concrete framing (199M and 90K).
  - 2 of the 16 had interior courtyards; both of these had Walton Electric (199M and 27R).
  - 1 of the 16, only PS 199M, had Wilaka.
  - 3 of the 16 had Walton Electric (199M, 27R, and 224K); 2 of the 3 had interior courtyards (199M and 27R). Of these 3, only 199M is a concrete frame building.

- The Electrical Contractor, Walton Electric, was contracted by the BOE to do the Electrical work on four (4) schools during the 1958-1962 period (199M, 111X, 224K, and 27R).
  - 2 of the 4 had interior courtyards (199M and 27R).
  - 2 of the 4 had Wilaka; both of these had concrete framing (199M and 111X).
  - 3 of the 4 had H. Sand (199M, 27R, and 224K).

ADDITIONAL SCHOOLS SELECTION

In order to select additional schools for potential air monitoring, the SCA chose school buildings that were either:

(1) Constructed by Wilaka Construction Corporation, or;
(2) Similar in construction characteristics to PS 199M. Significant characteristics of other schools for inclusion were those constructed with concrete framing and those that were constructed with an interior courtyard.

An additional requirement was that the schools must have had T-12/HID lighting replaced. Based on these selection criteria, the SCA proposes to perform the below-described additional air sampling at the following 2 schools:

Building No.	Address	School Name	GC	Framing Method	Courtyard
PS 161M	499 West 133 Street	Pedro Albizu Campos	Wilaka Const.	Conc. & Steel	Yes (above Auditorium 1-4)
JHS 296-562K	125 Covert Street	Evergreen Middle School For Urban Exploration	Planet Const.	Concrete	Yes (above Auditorium 2-3 & Cafe 1-3)

Should either of these schools be found to have airborne PCB concentrations above guidance based on the sampling and confirmation protocol outlined below, then a similarly constructed supplemental school (Wilaka-built or concrete frame type, depending on which school may have elevated PCBs) will also be evaluated, as needed:

Building No.	Address	School Name	GC	Framing Method	Courtyard
PS 145M	150 West 105 Street	Bloomingdale School	Wilaka Const.	Conc. & Steel	Yes (@ grade-1)
PS 198M	1700 3rd Avenue	Isador E. Ida Straus	Caristo Const.	Concrete	Yes (above Auditorium B-3)

If testing at either or both of these additional schools is conducted based on results at PS 161M or JHS 296-562K, and if airborne PCB concentrations above guidance are found at one or both of these additional schools, PS 145M and PS 198M, SCA will consider further air sampling, further remedial actions, or both, based on the sampling results, taking into account the sampling locations; number of results above guidance; amount above guidance; and other factors that possibly may have influenced test results, such as weather or ventilation.

AIR SAMPLING PLAN

A total of nine (9) PCB air samples will be collected from representative primary and transitory spaces within both P.S. 161M and J.H.S. 296-562K. In addition to area sampling, quality assurance sampling will include collection of one (1) front/back sample to evaluate sampling collection efficiency, one (1) duplicate sample, and one (1) ambient air sample for comparison purposes. In addition, one (1) field spike sample and one (1) field blank sample will be collected for additional quality control purposes.

Following are the proposed sampling locations for each of the schools:

P.S. 161M

- Primary spaces – kindergarten 109, classrooms 118, 127, 135, and 145.
- Transitory spaces – gymnasium, lunch/play room, library, and corridor outside the general office.

J.H.S. 296-562K

- Primary spaces – classrooms 211, 239, 303, 320, 336, and 357.
- Transitory spaces – gymnasium, library, and 3rd floor north corridor.

Temperature readings will also be collected and data logged throughout the sampling period in each of the sampling locations.

Air samples will be analyzed in accordance with EPA TO-10A to achieve a detection limit of approximately fifty (50) nanograms per cubic meter of air (ng/m3). Samples will be analyzed using a standard turnaround time. Data acceptability will be based upon less than ten percent (10%) flow rate drift during sample collection and review of blank and surrogate sample results. Data not meeting these criteria will be voided.

RESULTS INTERPRETATION AND FOLLOW–UP ACTIONS

The results of the PCB air samples will be compared to EPA's indoor air guidelines for school buildings, based on the ages of building occupants.

If all air sample results in a school demonstrate PCB air concentrations are below guidance levels in the initial sampling event, PCB air sampling will be considered representative for that school or construction type and further evaluation will be considered unnecessary.

If air samples are found to be in excess of guidance levels in a school, the following protocol will be followed:

1. Review results with EPA and discuss;
2. Perform a thorough visual inspection of the areas with elevated results to evaluate physical conditions, ventilation system and verify sampling represented normal operating conditions;
3. Develop protocol for performing confirmatory air sampling, and;
4. Based on location, levels, and amount of samples above guidance, develop and implement additional remedial measures (which may include track down and removal of PCB sources).

Should elevated air sampling results be confirmed, air sampling will then be performed at the supplemental school of that type (Wilaka-constructed or same construction features). The air sampling protocol described above will be utilized in the supplemental school.

CONCLUSION

This proposal represents a risk-based approach to address remaining uncertainties following the Pilot Study. Indeed, this proposed testing plan responds to and addresses certain air sampling results in the Pilot Study. However, based on the Pilot Study and long term monitoring results, in which PS 199M was unique, the SCA does not expect to find elevated levels in these identified schools, which were chosen based on their similarity to PS 199M in potentially relevant design features.

The City's management of PCBs in schools will continue to be risk-based and informed by all relevant data, including the results of this proposed sampling.